



## Infrastructure carbon

### Client's objectives

London Underground is a key part of the capital's transportation infrastructure and has significant upgrade programs planned for the coming decades.

The organization is working to reduce energy consumption and carbon outputs in order to meet sustainability objectives set by the Mayor of London.

As a signatory to the Infrastructure Carbon Review, London Underground wanted to understand where the carbon lies in major station capacity upgrades in order to identify carbon and cost reductions at the design stage and when procuring the works.

### The project

Camden Town station capacity upgrade program was chosen for a 'proof of concept' study. Using the Rail Safety & Standards Board's (RSSB) embodied carbon measurement tool we analyzed operational and capital carbon which allowed us to produce whole life carbon projections and identify hotspots where carbon and costs could be reduced.

### Key services delivered

In addition to the carbon modelling we also carried out a stakeholder engagement exercises with senior management, procurement and the station development teams in order to help raise awareness of where the carbon intensive aspects lie.

Taking the findings from the first stage of the project we modelled a range of innovations focusing on products and practices that could reduce the carbon hotspots.

Recommendations were then made on amending the procurement process to drive innovations which reduce both carbon and costs.

### Project impacts

The study identified that more than 60% of whole life carbon resides in the capital, rather than operational works of the station design, particularly in areas such as concrete and construction waste.

The project teams have adopted the models to use as the station moves through development and to provide a framework for carbon management.

London Underground is now engaging with the RSSB to further develop their carbon measurement tool to improve its use in projects such as the stations capacity upgrade program.

### What our client said

*"Sustain have helped us develop a whole life carbon model and carbon baseline for our 'proof of concept' station. Coupled with recommendations describing how to include carbon in future procurement processes we have now started our journey towards lower carbon and lower cost station upgrades."*

**London Underground**

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